

CLAIMS

Please amend the claims as follows and introduce new claims 22-27 for consideration.

Claim 1 (Canceled)

2. (Currently amended) A tape drive head cleaner for a tape drive having a magnetic read/write head adapted to be in contact with a tape, the head cleaner comprising:

a brush carriage;

a brush mounted on the brush carriage; and

a brush carriage movement mechanism coupled to the brush carriage for moving the brush carriage to cause the brush to sweep along the length of the read/write head along a first direction and a second opposite direction in a single cleaning cycle when the tape is no longer in contact with the read/write head wherein the single cleaning cycle is triggered by a single event.

3. (Original) The head cleaner of claim 2, wherein the read/write head has longitudinal grooves, and the brush has bristles, and wherein the brush carriage movement mechanism is configured to move the brush carriage so as to cause the brush bristles to enter the grooves and move the brush in the direction of the grooves.

4. (Previously presented) The head cleaner of claim 2 further comprising an actuator coupled to the read/write head, the actuator controllable to move the read/write head during movement of the brush carriage.

5. (Previously presented) The head cleaner of claim 2 wherein the brush carriage movement mechanism comprises a lead screw and a half nut on the brush carriage, the half nut engaging the lead screw such that rotation of the lead screw drives the brush carriage vertically along the lead screw.
6. (Original) The head cleaner of claim 5, wherein the brush carriage movement mechanism further comprises a stepper motor coupled to the lead screw to control the rotation of the lead screw.
7. (Previously presented) The head cleaner of claim 2 further comprising a limit switch fixed in a position to detect a reference position of the brush carriage.
8. (Previously presented) The head cleaner of claim 2 further comprising a controller to control the stepper motor to control movement of the brush carriage in relation to the reference position and cause the brush to sweep the entire length of the read/write head.
9. (Original) The head cleaner of claim 8, wherein the controller further controls the stepper motor to control movement of the brush carriage to cause the brush to sweep past a bottom edge of the read/write head.
10. (Previously presented) The head cleaner of claim 2 wherein the brush carriage movement mechanism further comprises guide shafts on which the brush carriage is mounted so as to be guided during movement of the brush carriage in response to the rotation of the lead screw.

11. (Currently amended) A tape drive comprising:

a write/read head having grooves extending along a first axis, wherein the write/read head is adapted to be in contact with a tape;

a brush; and

a brush carriage on which the brush is mounted, the brush carriage controllably movable to sweep the brush on the write/read head along the first axis along a first direction and a second opposite direction in a single cleaning cycle after the tape is no longer in contact with the write/read head wherein the single cleaning cycle is triggered by a single event.

12. (Original) The tape drive of claim 11, further comprising a write/read head actuator configured to move the write/read head on the first axis.

13. (Original) The tape drive of claim 12, wherein the write/read head actuator is further configured to move the write/read head along the first axis simultaneously with the sweep of the brush on the write/read head.

14. (Previously presented) The tape drive of claim 12, further comprising a lead screw and a half nut on the brush carriage and carried by the lead screw rotation of the lead screw during the brush carriage along the lead screw.

15. (Original) The tape drive of claim 14, wherein a longitudinal axis of the lead screw is parallel to the first axis such that the brush carriage is moved along a second axis parallel to the first axis and the brush is moved along the first axis.

16. (Previously presented) The tape drive of claim 11, further comprising a stepper motor and a gear train operatively coupled between the stepper motor and the lead screw, with the stepper motor operable to rotate the lead screw to move the brush up and down in steps along the first axis.

17. (Previously presented) The tape drive of claim 11, further comprising a limit switch operable to sense movement of the brush to a reference position.

18. (Previously presented) The tape drive of claim 11, wherein the stepper motor is controllable to move the brush from a reference position above a first axial end of the write/read head to a position below a second axial end of the write/read head.

19. (Previously presented) The tape drive of claim 11, wherein the brush is arranged on the brush carriage such that bristles of the brush enter the grooves of the write/read head when the brush sweeps on the write/read head and exit the grooves when the brush is moved to the reference position and to the position below the second axial end of the write/read head.

20. (Previously presented) The tape drive of claim 11, further comprising guide shafts extending parallel to the first axis, the brush carriage slidably mounted on the guide shafts to constrain movement of the brush carriage along the second axis.

21. (Currently amended) A tape drive head cleaner for use with a magnetic read/write head adapted to be in contact with a tape, the read/write head oriented along a first axis, the tape drive head cleaner comprising:

a cleaning element adapted to come into contact with and clean the magnetic read/write head in a first direction and a second opposite direction in a single cleaning

~~cycle after the tape is no longer in contact with the read/write head~~wherein the single cleaning cycle is triggered by a single event; and

a movement mechanism coupled to the cleaning element and configured to move the cleaning element, wherein the movement mechanism moves the cleaning element along the first axis when moving the cleaning element in the first and second directions.

22. (New) The tape drive of claim 2 wherein the single event comprises completion of winding of a tape onto a tape cartridge.

23. (New) The tape drive of claim 2 wherein the brush is moved in the second opposite direction immediately after movement in the first direction has completed.

24. (New) The tape drive of claim 11 wherein the single event comprises completion of winding of a tape onto a tape cartridge.

25. (New) The tape drive of claim 11 wherein the brush is moved in the second opposite direction immediately after movement in the first direction has completed.

26. (New) The tape drive head cleaner of claim 21 wherein the single event comprises completion of winding of a tape onto a tape cartridge.

27. (New) The tape drive head cleaner of claim 21 wherein the brush is moved in the second opposite direction immediately after movement in the first direction has completed.